

**IN THE CLAIMS:**

Please add new claims 88-118 as follows:

88. (New) A line-on-line structure, comprising:

a first layer having a plurality of lines of a first medium and a plurality of lines of a second medium, each line of the first medium being placed adjacent to lines of the second medium; and

a second layer having a plurality of lines of a third medium and a plurality of lines of the second medium, each line of the third medium being aligned with a center of a line of the first medium in the first layer, each of said first and third media having an optical property different from that of the second medium.

89. (New) The line-on-line structure of claim 88, wherein the plurality of lines of the second medium in the first layer are identical or substantially identical to one another, and wherein the plurality of the lines of the first medium in the first layer are identical or substantially identical to one another, thereby the combination of the lines of the first and second media in the first layer producing a repetitive pattern.

90. (New) The line-on-line structure of claim 88, the plurality of lines of the first medium in the first layer being wider than the plurality of lines of the third medium in the second layer.

91. (New) The line-on-line structure of claim 88, the plurality of lines of the second medium in the first layer being narrower than the plurality of lines of the second medium in the second layer.

92. (New) The line-on-line structure of claim 88, one of the lines of the third medium in the second layer having a left edge and a right edge, and one of the lines of the first medium in the first layer having a left edge and a right edge.

93. (New) The line-on-line structure of claim 92, further comprising a distance  $d_1$  measuring a gap from the left edge of said one of the lines of the third medium in the second layer to the left edge of said one of the lines of the first medium in the first layer; and a distance  $d_2$  measuring a gap from the right edge of said one of the lines of the third medium in the second layer to the right edge of said one of the lines of the first medium in the first layer.

94. (New) The line-on-line structure of claim 93, wherein said one of the lines of the third medium in the second layer is aligned with a center of said one of the lines of the first medium in the first layer if  $d_1 = d_2$ .

95. (New) The line-on-line structure of claim 93, wherein said one of the lines of the third medium in the second layer is shifted to the right of said one of the lines of the first medium in the first layer if  $d_1$  minus  $d_2$  produces a positive number.

96. (New) The line-on-line structure of claim 93, wherein said one of the lines of the third medium in the second layer is shifted to the left of said one of the lines of the first medium in the first layer if  $d_1$  minus  $d_2$  produces a negative number.

97. (New) The line-on-line structure of claim 88, wherein the first and second layers are connected to one another or through at least another layer to form an integral structure.

98. (New) A line-in-line structure, comprising:  
a first layer having a plurality of lines of a first medium and a plurality of lines of a second medium, each line of the first medium being placed adjacent to lines of the second medium; and  
a second layer having a plurality of lines of a third medium and a plurality of lines of the second medium, each line of the second medium in the second layer being aligned with a center of a line of the second medium in the first layer, each of said first and third media having an optical property different from that of the second medium.

99. (New) The line-in-line structure of claim 98, the plurality of lines of the second medium in the first layer being narrower than the plurality of lines of the second medium in the second layer.

100. (New) The line-in-line structure of claim 98, wherein the plurality of lines of the second medium in the first layer are identical or substantially identical to one another, and wherein the plurality of the lines of the first medium in the first layer are identical or substantially identical to one another, thereby the combination of the lines of the first and second media in the first layer producing a repetitive pattern.

101. (New) The line-in-line structure of claim 98, the plurality of lines of the first medium in the first layer being narrower than the plurality of lines of the third medium in second layer.

102. (New) The line-in-line structure of claim 98, wherein the plurality of lines of the second medium in the first layer being wider than the plurality of lines of the second medium in the second layer.

103. (New) The line-in-line structure of claim 98, one of the lines of the second medium in the second layer having a left edge and a right edge, and wherein one of the lines of the second medium in the first layer having a left edge and a right edge.

104. (New) The line-in-line structure of claim 103, further comprising:  
a first distance from the left edge of said one of the lines of the second medium in the second layer to the left edge of one of the lines of the second medium in the first layer; and  
a second distance from the right edge of said one of the lines of the second medium in the second layer to the right edge of said one of the lines of the second medium in the first layer.

105. (New) The line-in-line structure of claim 104, wherein said one of the lines of the second medium in the second layer is aligned with a center of said one of the lines of the second medium in the first layer if the first and second distances are equal.

106. (New) The line-in-line structure of claim 104, wherein said one of the lines of the second medium in the second layer is shifted to the right of said one of the lines of the second

medium in the first layer if the first distance minus the second distance produces a positive number.

107. (New) The line-in-line structure of claim 104, wherein said one of the lines of the second medium in the second layer is shifted to the left of said one of the lines of the second medium in the first layer if the first distance minus the second distance produces a negative number.

108. (New) A method for multi-orientation of orthogonal pairs, comprising:  
placing a grating; and  
shining light on the grating wherein the light is not perpendicular to the orientation of the grating.

109. (New) A line-in-line structure, comprising:  
a first layer having a plurality of lines of a first medium and a plurality of lines of a second medium, each line of the first medium being placed adjacent to lines of the second medium; and  
a second layer having a plurality of lines of a third medium and a plurality of lines of a fourth medium, each line of the fourth medium in the second layer being aligned with a center of a line of the second medium in the first layer, each of said first and third media having an optical property different from that of the second and/or fourth media.

110. (New) The line-in-line structure of claim 109, the plurality of lines of the second medium in the first layer being narrower than the plurality of lines of the fourth medium in the second layer.

111. (New) The line-in-line structure of claim 109, wherein the plurality of lines of the second medium in the first layer are identical or substantially identical to one another, and wherein the plurality of the lines of the first medium in the first layer are identical or substantially identical to one another, thereby the combination of the lines of the first and second media in the first layer producing a repetitive pattern.

112. (New) The line-in-line structure of claim 109, the plurality of lines of the first medium in the first layer being narrower than the plurality of lines of the third medium in second layer.

113. (New) The line-in-line structure of claim 109, wherein the plurality of lines of the second medium in the first layer being wider than the plurality of lines of the fourth medium in the second layer.

114. (New) The line-in-line structure of claim 109, one of the lines of the fourth medium in the second layer having a left edge and a right edge, and wherein one of the lines of the second medium in first layer having a left edge and a right edge.

115. (New) The line-in-line structure of claim 114, further comprising:

a first distance from the left edge of said one of the lines of the fourth medium in the second layer to the left edge of one of the lines of the second medium in the first layer; and

a second distance from the right edge of said one of the lines of the fourth medium in the second layer to the right edge of said one of the lines of the second medium in the first layer.

116. (New) The line-in-line structure of claim 115, wherein said one of the lines of the fourth medium in the second layer is aligned with a center of said one of the lines of the second medium in the first layer if the first and second distances are equal.

117. (New) The line-in-line structure of claim 115, wherein said one of the lines of the fourth medium in the second layer is shifted to the right of said one of the lines of the second medium in the first layer if the first distance minus the second distance produces a positive number.

118. (New) The line-in-line structure of claim 115, wherein said one of the lines of the fourth medium in the second layer is shifted to the left of said one of the lines of the second medium in the first layer if the first distance minus the second distance produces a negative number.